

Feedback from Installing LarSoft at Warwick

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First Impressions

- Warwick system
 - OpenSUSE 11.3 (gcc 4.5.0, python 2.6.5)
 - Totally 64bit
- Attempted local install following the instructions on the wiki.
- **Quick answer – doesn't work out the box.**

External Packages

- Supplied external packages cause problems.
- Not ***binary compatible*** with Warwick system
 - Likely to affect other sites.
- Requires rebuilding ups and other products
 - Probable this can be automated.
 - Investigating a “one click” way to rebuild.

Improving External Packages?

- Binary distribution is the issue.
 - Distribute source package with one click rebuild?
 - Sources in LarSoft SVN, built as part of LarSoft build?
 - See, e.g. big scientific toolkits like VTK, Paraview.
- Improve environment setup?
- ups is only used for setting environment variables?
 - Use a different tool?
 - Environment modules (<http://modules.sourceforge.net>)
 - Shell agnostic (good for Nevis?), even Python/Perl.

General Comments

- Probable that we can get LarSoft installed at Warwick.
 - Worst case can run on lbne system(s).
- Too many steps to getting LarSoft up and running.
- I'm looking at ways to reduce it to 2:
 - Checkout from svn
 - “configurationstep && buildstep && installstep”

- Lack of portability is a serious problem in HEP software at present.
 - Occurs both at code and buildsystem level.
- Does not mean LarSoft should ***support*** every platform.
- Benefits to adopting practices that at least allow easy build and testing on other UNIces.

Code level portability

- Main issues:
 - External library versions (e.g. Boost).
 - Use of system specific calls.
- Suggestions for improving the code long term:
- Use of `#ifdefs` around version dependent sections.
- **Unit testing** to identify bugs/variations *early*.
 - Vice versa: feed back bugs into unit testing.

Improving buildsystem portability

- Might be possible to port build of LarSoft to a modern tool like CMake or Scons.
- I'm not an SRT expert – so am still learning how it separates version control from the buildsystem.
- I have some experience in CMake so would be happy to start looking at using it to build LarSoft.